



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,237	01/20/2004	Northiko Moriwaki	1213.43382X00	8065
86636 7590 09/01/2009 BRUNDIDGE & STANGER, P.C. 1700 DIAGONAL ROAD, SUITE 330 ALEXANDRIA, VA 22314			EXAMINER	SAMUEL, DEWANDA A
		ART UNIT	PAPER NUMBER	
		2416		
		MAIL DATE	DELIVERY MODE	
		09/01/2009	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/759,237	<b>Applicant(s)</b> MORIWAKI, NORIHIKO
	<b>Examiner</b> DEWANDA SAMUEL	<b>Art Unit</b> 2416

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 27 April 2009.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 12-14 is/are allowed.
- 6) Claim(s) 1-3,5,7-9,11,15-23 is/are rejected.
- 7) Claim(s) 4,6,10 and 11 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 20 January 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

**DETAILED ACTION**

1. This communication is responsive to the communication filed on 04/27/2009.

**Claims 2-23** are pending.

***Response to Argument***

2. Applicant's arguments filed 04/27/2009 have been fully considered but they are not persuasive.

Applicant alleges Sindhu ( US Patent 5,905,725) and Spinney ( US Patent 5,414,704) does not discloses in claims 2,3,5,8 and 9. " a function item judgment unit for judging a function item to be required for said incoming packet, a forwarding information generator for determining a forwarding port for said incoming packet in accordance with said function item obtained from judging by said function item judgment unit and imparting to said incoming packet forwarding information for designating said forwarding port, and a forwarding path switching unit for switching a forwarding path when forwarding said incoming packet among said plurality of ports based on said forwarding information as recited in the claims."

" when said function item judgment unit has judged that a plurality of functional processing are required for said incoming packet, the plurality of forwarding information corresponding to functional processors capable of executing said required functional processing is imparted to said incoming packets at the forwarding information generator in order to forward said incoming packets

Art Unit: 2416

successively to a plurality of ports to which the functional processors capable of executing said required functional processing are connected respectively ." The claims limitations are broad and were interpreted in the broadest most reasonable interpretation.

Examiner respectfully disagrees: Sindhu discloses having the same high speed switching device structure, see fig. 2B as the claimed invention. The high speed switching device has the capability to function as the claimed invention whether it is implicitly or explicitly disclose. The claimed limitation given in a broad manner without any specific features.

3. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., judges whether a header which is imparted to the packet forwarded to a functional processor (FP) and that judges whether forwarding the packet to the FP in case of forwarding the header) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

4. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies

Art Unit: 2416

(i.e., forwarding information renal unit) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

***Specification***

5. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 2,3,5,8,20-23** are rejected under 35 U.S.C. 102(b) as being anticipated by Sindhu et al. ( US Patent 5,905,725).

**With regard to claim 2**, a packet communication device, comprising:  
a plurality of line interfaces capable of reception or transmission of a

packet, (**Sindhu et al. disclose having a high speed switching device interpreted as a "communication device", see title. Sindhu et al. further discloses having a plurality of line input interfaces 300 which is included in a input port 107 cable of reception, see fig. 3 and col. 4 lines 52-55**) ; a plurality of ports to which said plurality of line interfaces are connected (**see fig. 3 and col. 4 lines 52-55, input port 107 and line interface 300**);and to which at least one functional processor to be used to perform functional processing on an incoming packet received by any of said plurality of line interfaces can be connected as needed, (**see fig. 3 and col. 4 lines 52-55, a data handler 304 interpreted as a "functional processor" receiving packets from line input interface 302 and dividing the packets into fixed length cells interpreted as "functional processing"**) ; a function item judgment unit for judging a function item to be required for said incoming packet, (**see col. 4 lines 40-50, a route look-up engine 110 interpreted as a "function item judgment unit" performs a search on the key information interpreted as a "function item"**);a forwarding information generator for determining a forwarding port for said incoming packet in accordance with said function item obtained from judging by said function item judgment unit and imparting to said incoming packet forwarding information for designating said forwarding port, (**see fig. 3 and col. 4 lines 40-50, a controller 106 interpreted as a "forwarding information generator" returns a result of which output port associated with the destination**) ; and a forwarding path switching unit for switching a forwarding path when forwarding said incoming packet among said plurality of ports based on said forwarding information, (**see fig. 3 col. , ( see fig. 3 col. A output switch 102 interpreted as a "**

**forwarding path switching unit” transmitting a packet to a output port 108 according to the result information); wherein when said function item judgment unit has judged that a plurality of functional processing are required for said incoming packet, ( Sindhu et al. discloses having a route look-up engine 110 interpreted as a “function item judgment unit” performs a search on the key information interpreted as a “ function item” ); the plurality of forwarding information corresponding to functional processors capable of executing said required functional processing is imparted to said incoming packets at the forwarding information generator in order to forward said incoming packets successively to a plurality of ports to which the functional processors capable of executing said required functional processing are connected respectively,( Sindhu et al. discloses having a result that is coupled to other information ( source ID, flowID , packet length , etc) interpreted as “ plurality of forwarding information” corresponding to output switch 102 and output port 108 interpreted as “ plurality of ports” ). It is inferred the packet switching system of Sindhu et al. has the functionality of processing incoming packets according to the header information in which informs the switching hardware of which port is used.**

**With regard to claim 3,** Sindhu et al. teaches the packet communication device recited in claim 2. wherein in order to forward those incoming packets which have been subjected to said plurality of functional processing to any of said plurality of line interfaces, said forwarding information generator further imparts, to said packet,

forwarding information corresponding to a port, to which the said line interface is connected for forwarding said incoming packets, (**Sindhu et al. discloses having a route look-up engine 110 interpreted as a “function item judgment unit” within a controller 106 performs a search on the key information interpreted as a “function item” and attaching a result to other information, see col. 4 lines 40-67;**)

**With regard to claim 5,** Sindhu et al. teaches the packet communication device recited in claim 2 or 3. wherein as said incoming packet is successively forwarded based on said forwarding information, said forwarding information generator further imparts, to said incoming packet, subsequent forwarding information for designating in said forwarding information which information concerning the subsequent forwarding destination is, and wherein said device further comprises: a forwarding information renewal unit for renewing, after said incoming packet is forwarded to a port to be designated in said forwarding information and said subsequent forwarding information, said subsequent forwarding information, (**Sindhu et al. discloses having a route look-up engine 110 interpreted as a “function item judgment unit” within a controller 106 performs a search on the key information interpreted as a “ function item” and attaching a result to other information, see col. 4 lines 40-67);**

**With regard to claim 8,** Sindhu et al. teaches the packet communication device recited in claim 2. wherein at least one said functional processor is further provided with said functional judgment processor and said forwarding information generator, (**see**

**col. 4 lines 39-50, a controller 106 interpreted as "functional processor" comprise of a route look-up engine 110 interpreted as a " functional judgment processor and forwarding information generator" returns a result which includes the output port associated with the destination).**

**With regard to claim 19,** Sindhu et al. teaches the packet communication device recited in claim 3. wherein at least one said functional processor is further provided with said functional judgment processor and said forwarding information generator, ( see **col. 4 lines 39-50, a controller 106 interpreted as "functional processor" comprise of a route look-up engine 110 interpreted as a " functional judgment processor and forwarding information generator" returns a result which includes the output port associated with the destination).**

**With regard to claim 20,** Sindhu et al. teaches the packet communication device recited in claim 4. wherein at least one said functional processor is further provided with said functional judgment processor and said forwarding information generator, ( see **col. 4 lines 39-50, a controller 106 interpreted as "functional processor" comprise of a route look-up engine 110 interpreted as a " functional judgment processor and forwarding information generator" returns a result which includes the output port associated with the destination).**

**With regard to claim 21,** Sindhu et al. teaches the packet communication device recited in claim 5, wherein at least one said functional processor is further provided with

said functional judgment processor and said forwarding information generator, ( see col. 4 lines 39-50, a controller 106 interpreted as "functional processor" comprise of a route look-up engine 110 interpreted as a " functional judgment processor and forwarding information generator" returns a result which includes the output port associated with the destination).

**With regard to claim 22**, Sindhu et al. teaches the packet communication device recited in claim 6. wherein at least one said functional processor is further provided with said functional judgment processor and said forwarding information generator, ( see col. 4 lines 39-50, a controller 106 interpreted as "functional processor" comprise of a route look-up engine 110 interpreted as a " functional judgment processor and forwarding information generator" returns a result which includes the output port associated with the destination).

**With regard to claim 23**, Sindhu et al. teaches the packet communication device recited in claim 7. wherein at least one said functional processor is further provided with said functional judgment processor and said forwarding information generator, ( see col. 4 lines 39-50, a controller 106 interpreted as "functional processor" comprise of a route look-up engine 110 interpreted as a " functional judgment processor and forwarding information generator" returns a result which includes the output port associated with the destination).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 7 and 15-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sindhu et al. ( US Patent 5,905,725) as applied to claim 2 above, and further in view of Momirov ( US Patent 6,320,859).

**With regard to claim 7,** Sindhu et al. teaches the packet communication device recited in claim 2. wherein said functional judgment unit and said forwarding information generator are installed in at least one of said plurality of line interfaces, (**Momirov discloses having ingress port interface device interpreted as a "interface" receiving inbound packet and a QIUD 220 reading packet data cell payload information and adding forwarding control information to cells, see col.6 lines 38-67.** It is inferred the QUID 220 has the functionality of a functional judgment unit and said forwarding information generator.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to incorporate an ingress port interface device which is

taught by Momirov into Sindhu et al. router providing a more scaled and efficient line interface whereby increasing support for a high volume of data.

**With regard to claim 15,** Sindhu et al. teaches the packet communication device recited in claim 3. However, does Sindhu et al. does not explicitly disclose wherein said functional judgment unit and said forwarding information generator are installed in at least one of said plurality of line interfaces, (**Momirov discloses having ingress port interface device interpreted as a “interface” receiving inbound packet and a QIUD 220 reading packet data cell payload information and adding forwarding control information to cells, see col.6 lines 38-67. It is inferred the QUID 220 has the functionality of a functional judgment unit and said forwarding information generator.**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to incorporate an ingress port interface device which is taught by Momirov into Sindhu et al. router providing a more scaled and efficient line interface whereby increasing support for a high volume of data.

**With regard to claim 16,** Sindhu et al. teaches the packet communication device recited in claim 4. However, does Sindhu et al. does not explicitly disclose wherein said functional judgment unit and said forwarding information generator are

installed in at least one of said plurality of line interfaces, (**Momirov discloses having ingress port interface device interpreted as a “interface” receiving inbound packet and a QIUD 220 reading packet data cell payload information and adding forwarding control information to cells, see col.6 lines 38-67.** It is inferred the QUID 220 has the functionality of a functional judgment unit and said forwarding information generator.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to incorporate an ingress port interface device which is taught by Momirov into Sindhu et al. router providing a more scaled and efficient line interface whereby increasing support for a high volume of data.

**With regard to claim 17,** Sindhu et al. teaches the packet communication device recited in claim 5. However, does Sindhu et al. does not explicitly disclose wherein said functional judgment unit and said forwarding information generator are installed in at least one of said plurality of line interfaces, (**Momirov discloses having ingress port interface device interpreted as a “interface” receiving inbound packet and a QIUD 220 reading packet data cell payload information and adding forwarding control information to cells, see col.6 lines 38-67.** It is inferred the QUID 220 has the functionality of a functional judgment unit and said forwarding information generator.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to incorporate an ingress port interface device which is taught by Momirov into Sindhu et al. router providing a more scaled and efficient line interface whereby increasing support for a high volume of data.

**With regard to claim 18,** Sindhu et al. teaches the packet communication device recited in claim 6. However, does Sindhu et al. does not explicitly disclose wherein said functional judgment unit and said forwarding information generator are installed in at least one of said plurality of line interfaces, (**Momirov discloses having ingress port interface device interpreted as a “interface” receiving inbound packet and a QIUD 220 reading packet data cell payload information and adding forwarding control information to cells, see col.6 lines 38-67. It is inferred the QUID 220 has the functionality of a functional judgment unit and said forwarding information generator.**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to incorporate an ingress port interface device which is taught by Momirov into Sindhu et al. router providing a more scaled and efficient line interface whereby increasing support for a high volume of data.

**10.** **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sindhu et al. ( US Patent 5,905,725) in view of Spinney (US patent 5,414,704).

**With regard to claim 9**, a packet communication device, comprising:  
a plurality of line interfaces capable of reception or transmission of a packet, (**Sindhu et al. disclose having a high speed switching device interpreted as a “communication device”, see title.** Sindhu et al. further discloses having a plurality of line input interfaces 300 which is included in a input port 107 cable of reception, see fig. 3 and col. 4 lines 52-55) ;one or a plurality of functional processors to be used to perform functional processing on an incoming packet received by any of said plurality of line interfaces, (**see fig. 3 and col. 4 lines 52-55, a data handler 304 interpreted as a “functional processor” receiving packets from line input interface 302 and dividing the packets into fixed length cells interpreted as “functional processing”**) ; a plurality of ports to which said plurality of line interfaces and said one or a plurality functional processors are connected **see fig. 3 and col. 4 lines 52-55, input port 107 and line interface 300**); a function item judgment unit for judging a function item to be required for said incoming packet, (**see col. 4 lines 40-50, a route look-up engine 110 interpreted as a “function item judgment unit” performs a search on the key information interpreted as a “function item”**); a forwarding information generator for determining a forwarding port for said incoming packet in accordance with said function item obtained by judging by said function item judgment unit, and imparting to said incoming packet forwarding information for designating said

forwarding port, (**see fig. 3 and col. 4 lines 40-50, a controller 106 interpreted as a "forwarding information generator" returns a result of which output port associated with the destination**); and a functional processor with a forwarding information generation function for performing functional processing on said incoming packet, determining, as a forwarding port, a port to which any of said plurality of line interfaces is connected based on a result of said functional processing, and imparting to said incoming packet forwarding information corresponding to said forwarding port, (**Sindhu et al. discloses having a result that is coupled to other information (source ID, flowID , packet length , etc) interpreted as " plurality of forwarding information" corresponding to output switch 102 and output port 108 interpreted as " plurality of ports" ). It is inferred the packet switching system of Sindhu et al. has the functionality of processing incoming packets according to the header information in which informs the switching hardware of which port is used**)

However, Sindhu et al. does not disclose when said function item judgment unit has judged that a plurality of functional processing are required for said incoming packet the plurality of forwarding information corresponding to functional processors capable of executing said required functional processing is imparted to said incoming packet at the forwarding information generator in order to forward said incoming packet successively to a plurality of ports to which the functional processors capable of executing said required functional processing are connected respectively, (**Spinney discloses having a address lookup in packet data communications link using hashing and content-**

**addressable memory, see title. Spinney further discloses having a controller 10 interpreted as a "judgement unit" detecting an destination address interpreted as "forwarding information" from a packet ,(see col. 5 lines 16-28), the controller 10 executes six independent processes interpreted as "functional processors" , see col. 5 lines 60-67. Spinney further discloses having a IR process 27 using a lookup result interpreted as "forwarding information generator" for forwarding a packet to a crossbar 12 which comprise of port connections, see col. 6 lines 14-49).**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to incorporate a data processing mechanism which is taught by Spinney into Sindhu's et al. router providing a efficient multiple processing stages whereby increasing processing speed on high volume of data.

***Allowable Subject Matter***

11. **Claims 4,6,10 and 11** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Claims 12-14** are allow over prior art.

***Prior Art***

**12.** The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Zemach ( US Patent 7,400,015)

Kopelman et al. ( US Patent 7,424,019)

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEWANDA SAMUEL whose telephone number is (571)270-1213. The examiner can normally be reached on Monday- Thursday 8:30-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Q. Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/  
Supervisory Patent Examiner, Art  
Unit 2416

/DeWanda Samuel/  
Examiner, Art Unit 2416  
9/1/2009